NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

RESTORATION AND MANAGEMENT OF DECLINING HABITATS

(acre)

CODE 643

DEFINITION

Restoring and conserving rare or declining native vegetated communities and associated wildlife species.

PURPOSE

- Restore land or aquatic habitats degraded by human activity
- Provide habitat for rare and declining wildlife species by restoring and conserving native plant communities.
- Increase native plant community diversity.
- Management of unique or declining native habitats.

Note: NRCS uses the term "wildlife" to include all animals, terrestrial and aquatic.

CONDITIONS WHERE PRACTICE APPLIES

On any landscape which once supported or currently supports the habitat to be restored or managed.

CRITERIA

General Criteria Applicable to All Purposes

- The minimum size of the restored area shall be 20 acres or all of the identified area if less than 20 acres.
- When a field contains soils that indicate the application of multiple seed mixture tables, use the following guidance:
    1. If an area of contiguous acres is ≥ 10 percent of the field *or* ≥ 10 acres, it shall be planted according to the seed mixture table that is appropriate to the site.
    2. If an area of contiguous acres is < 10 percent of the field *and* < 10 acres, it may be planted with the same mixture used on the adjacent/adjoining site.
    3. Non-contiguous areas will be evaluated individually. The above guidelines do not apply to the cumulative acres of non-contiguous acres.
- All plantings will be in accordance with the Range Planting (550) or Tree/Shrub Establishment (612) standard and specification relative to the details of planting such as seedbed preparation, nutrients, cover crops, timing, etc. Refer to Table 1 - 15 of this standard for species selection and adaptation.

    Seeding Zones in Table 1

    P = panhandle
    SW = south of I-40 west of I-35
    SE = south of I-40 east of I-35
    NW = north of I-40 west of I-35
    NE = north of I-40 east of I-35

- Vegetative manipulations of existing communities to restore plant and/or animal diversity can be accomplished by prescribed burning, grazing, mechanical, biological or chemical methods, or a combination of them all.
- Refer to Prescribed Burning (338) and Prescribed Grazing (528A) for guidance on utilizing grazing and fire for restoration activities.

- Weed control may be needed to establish the base grasses.

CONSIDERATIONS

Confer with biologists of other agencies and organizations to develop guidelines and specifications for conserving declining habitats when needed.

Practices should be integrated where needed. An example would be where patches of a pasture are burned to attract grazing animals on a three-year rotation to provide different stages of succession within the same pasture.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared to describe each habitat type to be restored. Specifications shall be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Refer to the standard, Range Planting (550) for establishment criteria.

Prescribed burning, grazing management, and replanting may be done if needed to maintain the desired plant community.

To benefit insect food sources for grassland nesting birds, spraying or other control of noxious weeds will be done on a “spot” basis to protect forbs and legumes that benefit native pollinators and other wildlife.

Management practices and activities are not to disturb cover during the primary nesting period for a targeted animal species. Exceptions could be granted for periodic burning or mowing when necessary to maintain the health of the plant community.

Where feasible prescribed burning will be utilized instead of mowing.

Any use of fertilizers, pesticides and other chemicals shall not compromise the intended purpose of this practice.

REFERENCES

Bidwell, T. G. et.al. Ecology and Management of Lesser Prairie Chicken. Oklahoma State University, E-970.

Masters, Ron. S. Ditchkoff, S. C. Farley. No. 10 Edge and other Wildlife Concepts. Oklahoma State University, L-276

Table 1. Basic Data For Calculating Mixtures [1/] [2/] [3/]

Grass Species	Area Of Adaptation [4/]	Full Seeding Rate
alkali sacaton		2.0
'Saltalk'	Statewide	
big bluestem		6.0
'Kaw'	Statewide	
'Rountree'	MLRA 116A, 117, 118, 119	
big sandreed	Statewide	4.0
blue grama		2.0
'Lovington'	Statewide	
'Hachita'	Statewide	
buffalograss		6.0
'Texoka' unhulled	Statewide	
'Bison'	Statewide	
eastern gamagrass		8.0
'Pete'	Statewide Except Panhandle	
'Iuka'	Statewide	
green sprangletop	Statewide	1.7
Indiangrass		4.5
'Lometa'	Statewide Except Panhandle	
'Cheyenne'	Statewide	
'Llano'	MLRA 70, 77	
'Osage'	East	
'Rumsey'	112, 116A, 117	
little bluestem		3.4
'Aldous'	MLRA 76, 80A, 84A, 84B, 112, 116A, 133B	
'Cimarron'	MLRA 70, 77, 78, 80A, 84A, 84B	
'Pastura'	MLRA 70, 77, 78, 80A, 84A, 84B	
plains bristlegrass [5/]	West	3.0
sand bluestem		6.0
'Woodward'	West	
sand dropseed	P, NW, SW	1.0
sand lovegrass		1.0
'Mason'	Statewide	
'Bend'	Statewide	
sideoats grama		4.5
'El Reno'	Statewide	
'Haskell'	Statewide	
switchgrass		3.0
'Alamo'	Bottomlands, Sub-Irrigated, Saline Sub-Irrigated Sites Where Annual Rainfall $\geq$ 25 Inches.	
'Blackwell'	Statewide	
'Grenville'	MLRA 70, 77, 78	
'Kanlow'	Bottomlands Only	
tall dropseed	NW, SW, NE, SE	1.0
western wheatgrass		7.0
'Barton'	NW, SW	

Table 1 (Continued)

Native Forbs & Shrubs [6/]	Area Of Adaptation		Full Seeding Rate Per Acre
Engelmanndaisy	Statewide		4.0
Pitcher's sage	NW, SW, NE, SE		4.0
Maximilian sunflower [6/]	Statewide		2.0
awnless bushsunflower	Statewide		4.0
compass plant	NW, SW, NE, SE		2.0
gayfeather	Statewide		4.0
black sampson	Statewide		2.0
pale echinacea	NE, SE		2.0
upright prairie coneflower	Statewide		0.3 (2% max)
plains coreopsis	Statewide		0.3 (2% max)
sand sagebrush	Refer to Table 2, 3, 6, & 7		1.0
four-wing saltbush	West Of I-35 Except For Sands Or Wet Sites. In MLRA 77A, 77B, ≤ WEG 86. Do not plant as a part of a mixture, plant as block or plot.		4.0 de-winged 10.0 winged
Native Legumes [6/]	**Inoculum Type (Species Specific)**	**Area Of Adaptation**	**Full Seeding Rate (PLS Lb./Ac)**
leadplant	Amorpha Spec 1	Statewide	2.0
tephrosia	Tephrosia Spec 1	Statewide	4.0
prairie clover	F	Statewide	4.0
Illinois bundleflower	Desmanthus Spec 1	Statewide	4.0
roundhead lespedeza	EL	NW, SW, NE, SE	2.0
tickclover	EL	Statewide	2.0
trailing wildbean	Strophostyles Spec 1	Statewide	2.0
western indigo	EL	Statewide	2.0
catclaw sensitivebriar	Amorpha Spec 1	Statewide	2.0
prairie acacia	EL	Statewide	2.0
partridge pea	EL	Statewide	4.0
least snoutbean	Rynchosia Spec 1	Statewide	2.0
other legumes	Use appropriate	Statewide	2.0

[1/] Based on full seeding rate of Pure Live Seed (PLS) per acre. Site adaptations and minimum and maximum percent of full seeding rates are reflected in Tables 2 - 15.

[2/] When seeding native harvest, the minimum percentages listed for each species in the range site Tables 2- 15 must be met.

[3/] Mixtures meet specifications when planted at not more than 5% below or 25% above the full rate for each individual species planted.

[4/] Cultivars are only approved if the species for that cultivar is listed in Tables 2 - 15. The seeding rates for the cultivars are the same as those for the species.

[5/] Tetrazolium tests (TZ) are approved for seed quality analysis.

[6/] Other native forbs, shrubs, and legumes may be used provided they are listed on the ecological site guide or range site technical guide in Section II of the FOTG that is appropriate for the area to be planted. Pro-rate the percentages in the mixture, assuming 2.0 lbs. per acre full seeding rate.

[7/] Do not exceed .1 lb. Maximilian sunflower per acre in mixture.

Table 2. Panhandle [8/]

Ecological Sites: loamy prairie, sandy plains, limy sandy plains, loamy plains, and limy uplands

Species	Min. Percent	Max. Percent
little bluestem	10	20
sand bluestem	10	40
switchgrass	5	25
Indiangrass	5	40
Must include of the above and total	**30**	**60**
sideoats grama	25	60
blue grama	10	40
buffalograss	0	20
sand lovegrass	5	20
sand dropseed	0	10
western wheatgrass	5	10
plains bristlegrass [9/]	0	10
forbs, legumes (minimum of 2 spp.)	5	10
sand sagebrush	5	10

[8/] Green sprangletop can be added at .5 to 1.0 lbs. per acre as a filler grass.

[9/] Plains bristlegrass can be included for wildlife purposes.

Table 3. Panhandle

Ecological sites: deep sand, sandy bottomland, and dune

Species	Min. Percent	Max. Percent
little bluestem	10	40
sand bluestem	15	40
Indiangrass	5	20
switchgrass	10	30
Minimum of total of above	**40**	**75**
sideoats grama	0	30
blue grama	10	25
sand lovegrass	10	20
sand dropseed	0	10
big sandreed	5	20
forbs, legumes (minimum of 2 spp.)	5	10
sand sagebrush	5	10

Table 4. Panhandle [8/]

Ecological sites: hardland, shallow, very shallow

Species	Min. Percent	Max. Percent
little bluestem	5	25
sand bluestem	0	15
Indiangrass	0	15
switchgrass	0	15
sideoats grama	25	60
blue grama	35	50
buffalograss	15	20
Must total	**85**	**100**
sand lovegrass	0	10
western wheatgrass [10/]	5	25
forbs and legumes (minimum of 2 spp.)	0	10

[8/] Green sprangletop can be added at .5 to 1.0 lbs. per acre as a filler grass.

[10/] Hardland sites only.

Table 5. Panhandle

Ecological sites: loamy bottomland, moderately saline, subirrigated

Species	Min. Percent	Max. Percent
little bluestem [11/]	10	30
sand bluestem [11/]	10	30
Indiangrass	10	20
switchgrass	10	40
Mixture total	**50**	**100**
blue grama [12/]	5	10
tall dropseed	0	10
alkali sacaton [13/]	15	40
eastern gamagrass [14/]	5	25
western wheatgrass	10	20
buffalograss [12/]	5	10
sideoats grama [12/]	5	10
forbs and legumes (minimum of 2 spp.)	5	10
plum	1% of acreage	5% of acreage

[11/] Not on moderately saline, subirrigated, wet meadow, or wetland type sites.

[12/] Loamy bottomland only.

[13/] Moderately saline and alkali areas only.

[14/] Subirrigated or wetland type-sites only.

Table 6. Western [8/]

Ecological sites: loamy, loamy prairie, limy prairie, sandy plains, mixedland slopes, sandy prairie, limy sandy plains, loamy plains, blackclay prairie, sandy savanna, loamy savanna, eroded prairie, eroded sandy savanna, eroded savanna

Species	Min. Percent	Max. Percent
little bluestem	15	30
big or sand bluestem	20	40
Indiangrass	10	40
switchgrass	5	25
sideoats grama	10	50
blue grama	10	30
buffalograss	0	20
sand lovegrass	5	10
tall dropseed	0	10
western wheatgrass	0	10
forbs and legumes (minimum of 2 spp.)	5	15
sand sagebrush [15/]	5	10
plum	0	1% of acreage

[8/] Green sprangletop can be added at .5 to 1.0 lbs. per acre as a filler grass.

[15/] VFSL textured soils or coarser only.

Table 7. Western [16/]

Range sites: deep sand, deep sand savanna, sandy bottomland, and dune

Species	Min. Percent	Max. Percent
little bluestem	20	30
big or sand bluestem	25	40
Indiangrass	10	25
Switchgrass	10	40
Mixture total of above	**65**	**80**
sideoats grama	0	15
blue grama	5	15
sand lovegrass	10	20
tall dropseed	0	10
big sandreed	5	20
forbs and legumes (minimum of 2 spp.)	5	10
sand sagebrush	5	10
plum	1% of acreage	5% of acreage

[16/] Dune site may not be practical to revegetate.

Table 8. Western [8/]

Ecological sites: claypan prairie, red clay prairie, very shallow, shallow claypan, shallow prairie, hardland, shallow, red clay flats, gravely sandy, red shale, shallow clay prairie, shallow savanna, eroded clay, eroded shallow savanna, edgerock

Species	Min. Percent	Max. Percent
little bluestem	15	40
big or sand bluestem	5	25
Indiangrass	5	20
switchgrass	5	25
sideoats grama	20	60
Mixture total of above	**50**	**80**
blue grama	20	35
buffalograss	10	20
sand lovegrass	0	10
western wheatgrass [17/]	5	20
alkali sacaton [17/]	0	50
forbs and legumes (minimum of 2 spp.)	5	10

[8/] Green sprangletop can be added at .5 to 1.0 lbs. per acre as a filler grass.

[17/] Shallow claypan sites only.

Table 9. Western

Ecological sites: loamy bottomland, heavy bottomland, moderately saline, subirrigated, wet meadow

Species	Min. Percent	Max. Percent
little bluestem [11/]	10	30
sand or big bluestem [11/]	20	30
Indiangrass	10	30
switchgrass [18/]	10	30
Mixture total of above	**50**	**100**
blue grama [19/]	0	10
tall dropseed	0	10
alkali sacaton [20/]	10	40
eastern gamagrass	5	25
western wheatgrass	5	20
buffalograss [19/]	5	5
sideoats grama [19/]	5	10
forbs and legumes (minimum of 2 spp.)	5	10

[11/] Not on moderately saline, subirrigated, wet meadow, or wetland type sites.

[18/] Increase min. to 30% and max. to 70 % on sub-irrigated or wet meadow.

[19/] Loamy bottomland and heavy bottomlands only.

[20/] Moderately saline and alkali sites only.

Table 10. Western

Ecological sites: alkali bottomland, saline subirrigated, and slickspot

Species	Min. Percent	Max. Percent
little bluestem	5	20
sand or big bluestem	5	20
Indiangrass	5	20
switchgrass	10	30
tall dropseed	0	10
alkali sacaton	10	50
western wheatgrass [21/]	10	30
sideoats grama [22]	0	10
blue grama	10	25
buffalograss	5	20
forbs and legumes (minimum of 2 spp.)	5	10

[21/] Not on slickspot.

[22/] Only on slickspot.

Table 11. Eastern

Ecological sites: loamy prairie, sandy prairie, limy prairie, blackclay prairie, sandy savanna, loamy savanna, eroded prairie, eroded sandyland, eroded sandy savanna, and eroded savanna

Species	Min. Percent	Max. Percent
little bluestem	10	30
big bluestem	20	40
Indiangrass	15	40
switchgrass	5	25
sideoats grama	5	10
Minimum Total	**80**	**100**
blue grama	0	15
buffalograss	0	5
tall dropseed	0	5
western wheatgrass	0	10
eastern gamagrass	10	20
forbs and legumes (minimum of 2 spp.)	10	15
plum	0	1% of acreage

Table 12. Eastern [16/]

Ecological sites: deep sand, deep sand savanna, sandy bottomland, and dune

Species	Min. Percent	Max. Percent
little bluestem	10	25
big bluestem	25	40
Indiangrass	15	30
switchgrass	15	20
Minimum Total	**70**	**100**
sideoats grama	0	10
sand lovegrass	10	20
tall dropseed	0	10
big sandreed	5	20
forbs and legumes (minimum of 2 spp.)	5	15

plum	1% of acreage	5% of acreage

16/ Dune site may not be practical to revegetate.

Table 13. Eastern

Ecological sites: claypan prairie, red clay prairie, very shallow, shallow claypan, shallow prairie, shallow, shallow clay prairie, shallow savanna, claypan savanna, eroded clay, eroded shallow savanna

Species	Min. Percent	Max. Percent
little bluestem	20	50
big bluestem	5	25
Indiangrass	5	20
switchgrass	10	20
sideoats grama	10	30
Mixture Total	**50**	**100**
blue grama	5	10
buffalograss	10	20
tall dropseed	0	10
alkali sacaton 17/	15	80
forbs and legumes (minimum of 2 spp.)	5	10

17/ Shallow claypan sites only.

Table 14. Eastern

Ecological sites: loamy bottomland, sandy bottomland, heavy bottomland, moderately saline, subirrigated, wet meadow

Species	Min. Percent	Max. Percent
little bluestem 11/	10	30
big bluestem	20	40
Indiangrass	10	30
switchgrass 18/	10	30
Mixture Total	**60**	**100**
tall dropseed	0	10
alkali sacaton 20/	10	20
eastern gamagrass	10	25
western wheatgrass	0	20
sideoats grama 19/	0	10
forbs and legumes (minimum of 2 spp.)	5	10
plum (except wet meadow)	1% of acreage	5% of acreage

11/ Not on moderately saline, subirrigated, wet meadow, or wetland type sites.

18/ Increase min. to 30% and max. to 70% on subirrigated or wet meadow type-sites.

19/ Loamy bottomland and heavy bottomland only.

20/ Moderately saline and alkali areas only.

Table 15. Eastern

Ecological sites: alkali bottomland, saline subirrigated, and slickspot

Species	Min. Percent	Max. Percent
little bluestem	5	20
big bluestem	5	20
Indiangrass	5	20
switchgrass	20	40
tall dropseed	0	10
alkali sacaton	20	50
western wheatgrass [21/]	5	30
sideoats grama [22/]	0	10
blue grama	5	20
buffalograss	5	20
forbs and legumes (minimum of 2 spp.)	5	10

[21/] Not on slickspot.

[22/] Only on slickspot.

SAMPLE CALCULATION FOR COMPUTING RANGE MIXTURES

Species	Seeding Rate	% Of Mix	Lbs. PLS / Ac	Total Acres	Total PLS
little bluestem	3.4	25	0.85	80	68
Indiangrass	4.5	25	1.12	80	90
sideoats grama	4.5	30	1.35	80	108
switchgrass	3.0	10	0.3	80	24
Illinois bundleflower	4.0	10	0.4	80	32
	TOTAL	**100**			